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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/619,759      | 07/14/2003  | Carsten Hamm         | HAMM                | 7386             |

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| EXAMINER |
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FERRIS III, FRED O

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2128

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/619,759 | <b>Applicant(s)</b><br>HAMM ET AL. |  |
|                              | <b>Examiner</b><br>Fred Ferris       | <b>Art Unit</b><br>2128            |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/14/03</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. *Claims 1-29 have been presented for examination based on applicant's disclosure filed 14 July 2003. Claims 1-29 are currently pending in this application and stand rejected by the examiner.*

### **Drawings**

2. *Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.*

*Specifically the features disclosed in Figure 2 are disclosed in the specification paragraph 0023 as simply representing the transferring of data from floppy disk over the internet, and should therefor be labeled as prior art.*

### **Information Disclosure Statement**

3. *The information disclosure statement filed 14 July 2003 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the documents are not translated into the English language. It has been placed in*

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*the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).*

### **Specification**

4. *The incorporation of essential material in the specification by reference to an unpublished U.S. application, **foreign application or patent**, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f). Specifically, page 1, line 2 of the specification attempts to incorporate by reference the foreign application:*

*- German Patent Application, 102 31 675.9*

***Claim Rejections - 35 USC § 101***

*35 U.S.C. 101 reads as follows:*

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**5. *Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is drawn to non-statutory subject matter.***

*Regarding independent claim 1: The Examiner submits that claim 1, as written, is merely drawn to nonstatutory descriptive material since claimed "system" appears to be an apparatus claim that consists only of software program elements (i.e. program per se). In this instance, the claimed "devices" for setting up model of machine, model of controller, and simulator for performing a mechanical simulation, do not impart any functionality as being employed as a computer component. Further, the specification does not appear to set forth that claimed "system for simulating a production" consists of anything other than simply software elements. Dependent claims inherit this defect.*

*MPEP 2106 recites the following supporting rational for this reasoning:*

"Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data. Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se. Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized."

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. *Claims 1-29 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.*

*Specifically, the specification does not expressly set forth how a skilled artisan would realize the claimed “simulator” for performing a “mechanical simulation”, or setting up a “model of a controller”, or “mechanical model”, as claimed in independent claims 1, 15, and 29, such that a skilled artisan could make and/or used the claimed subject matter without undue experimentation. For example, there are no supporting flow charts, method steps, or formulas recited in the specification describing the implementation of the claimed “mechanical simulation”, or setting up a “model of a controller”, or “mechanical model”. In this instance, the specification merely appears as a “wish list” of features, but provides no guidance on specifically how a skilled artisan would implement such features. Dependent claims inherit the defects of the claims from which they depend.*

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. *The term "design/plan/program the controller and/or drive" in claims 2 and 16 renders the claim indefinite. The term is not clearly defined by the claim or the specification, and a skilled artisan would be unable ascertain the metes and bounds of the claimed subject matter. Further, it is unclear if applicants are specifically claiming limitations drawn to the design or planning or programming of the controller. (See: MPEP 2106)*

### ***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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**8. Claims 1-29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over “Dymola Dynamic Modeling Laboratory”, Version 5.0, Dynasim AB, 2002 or “Modelica – A language for Physical System Modeling, visualization and Interaction”, Elmquist et al, Proceedings of International Symposium on CASD, 1999 IEEE.**

Regarding independent claims 1, 16, and 29: Both Dymola and Elmquist disclose a method, system, and program code anticipating the claimed limitations of the present invention as follows:

- system for simulating a production and/or processing machine comprising:

(Dymola: pages 15, 24, 31-35, 137-197, Elmquist: Sections 3-5, 7.1)

- first device for setting up at least one mechanical model of the machine;

(Dymola: pages 16, 24, 72-87, 103-133, Elmquist: Sections 3-5, Figs. 3-11)

- simulator for mechanical simulation of machine and simulation data;

(Dymola : 15, 24, 31-35, 137-197, Elmquist: Sections 3-5, 7.1)

- device for model controller/drive for machine based on simulation data;

(Dymola: pages 93-96, Elmquist: Section 2 ,Figs. 1, 2)

Per claims 2 & 16: design/plan/program controller and/or drive of the machine; (Dymola: pages 93-96, Elmquist: Section 2 ,Figs. 1, 2)

Per claims 3 & 17: mechanical models of the machines as a graphic representation; (Dymola (entire teaching)/ Elmquist (Sections 2-7))

Per claims 4 & 18: implemented as an engineering system; to Dymola (entire teaching)/ Elmquist (Sections 2-7)



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Per claims 5 & 19: computer program for controlling the machine based on the model of the controller or drive; (Dymola: pages 93-96, Elmquist: Section 2 ,Figs. 1, 2)

Per claims 6 & 20: graphic display for graphical illustration of the simulation data; (Dymola (pages 69-97, 137-197)/ Elmquist (Sections 2-6)

Per claims 7 & 21: transmits data of the models that are set up by the second device, to the first device, which then generates an updated model based on the data of the control or drive models, which is in turn used to have the simulator repeat a mechanical simulation; (Dymola (pages 69-97)/ Elmquist (Sections 2-6)

Per claims 8 & 22: for storing information data for hardware components of the machine; (Dymola (pages 69-197)/ Elmquist (Sections 2-6)

Per claims 9 & 23: stored information data are provided in form of objects representing the corresponding hardware components;

Per claims 10 & 24: objects assist the first device in setting up the mechanical model; (Dymola (page 14)/ Elmquist (Section 1)

Per claims 11 & 25: additional memory associated with the second device for storing images of the objects;(Inherent features to Dymola (entire teaching)/ Elmquist (Sections 2-7)

Per claims 12 & 26: semantics contained in the information data to generate a computer program; Inherent features to Dymola (pages 69-97)/ Elmquist (Sections 3-7))

Per claims 13 & 27: use the same variable names; (Inherent features to Dymola (page 69)/ Elmquist (Section 3.1))

Per claims 14 & 28: system receives data from and/or transmits data to the machine via an intranet and/or the Internet; (Inherent features to Dymola (page 14)/ Elmquist (Section 1))

**9. In the alternative, claims 1-29 are rejected under 103(a) as obvious in view of either Dymola or Elmquist for the following reasons.**

A skilled artisan would known to implement the claimed "model of a controller for a machine" in view of the teachings of Dymola or Elmquist by

*creating the controller as a submodel to the actual machine model. For example, Otter et al (See: Modeling of Multibody Systems with the Object-Oriented Modeling Language Dymola, Otter et al, 1996) teaches the use of Dymola in implementing a model of a controller for a machine (page 3, Figure 1) through the use of submodels (Sections 2, 3) that realize controllers for actual machine models. Hence, a skilled artisan having access to the teachings of Dymola or Elmquist would have knowingly implemented a model of a controller for a machine as a submodel. An obvious motivation exists since the prior art teaches that specific class libraries for e.g. control systems can all be used in conjunction for generating a specific multi-domain application model. (See: Otter et al, Introduction, paragraph 1)*

### **Conclusion**

10. *The prior art made of record not relied upon is considered pertinent to applicant's disclosure, careful consideration should be given prior to applicant's response to this Office Action.*

*"Modeling of Multibody Systems with the Object-Oriented Modeling Language Dymola", Otter et al, 1996 teaches mechanical modeling and simulation.*

*U.S. Patent 7,085,694 issued to Xavier et al teaches mechanical modeling and simulation.*

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*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 571-272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 571-272-3700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached at 571-272-2279. The Official Fax Number is: (571) 272 8300*

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August 3 2006



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